

INTERNATIONAL PRELIMINARY EXAMINATION REPORT
(PCT Article 36 and Rule 70)

REC'D 08 DEC 2004

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Applicant's or agent's file reference CL2099PCT		FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416)	
International application No. PCT/US 03/26326	International filing date (day/month/year) 21.08.2003	Priority date (day/month/year) 22.08.2002	
International Patent Classification (IPC) or both national classification and IPC B01J23/26			
Applicant E.I. DU PONT DE NEMOURS AND COMPANY et al.			

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 6 sheets, including this cover sheet.

☐ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

 These annexes consist of a total of sheets.

3. This report contains indications relating to the following items:
 - I ☒ Basis of the opinion
 - II ☐ Priority
 - III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
 - IV ☐ Lack of unity of invention
 - V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
 - VI ☐ Certain documents cited
 - VII ☐ Certain defects in the international application
 - VIII ☐ Certain observations on the international application

Date of submission of the demand 19.03.2004	Date of completion of this report 07.12.2004
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer Holzwarth, A Telephone No. +49 89 2399-7269 

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EXAMINATION REPORT**

International application No. **PCT/US 03/26326**

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, Pages

1-60 as originally filed

Claims, Numbers

1-14 as originally filed

Drawings, Sheets

1-4 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
☐ the language of publication of the international application (under Rule 48.3(b)).
☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority in written form.
☐ furnished subsequently to this Authority in computer readable form.
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
☐ The statement that the information recorded in computer readable form is identical to the written sequence-listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
☐ the claims, Nos.:
☐ the drawings, sheets:

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5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	4-10,12-14
	No: Claims	1-3,11
Inventive step (IS)	Yes: Claims	
	No: Claims	1-14
Industrial applicability (IA)	Yes: Claims	1-14
	No: Claims	

2. Citations and explanations

see separate sheet

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Re Item V

Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

Reference is made to the following documents:

D1: US-A1-2001011061

D2: EP-A-0641598

D3: EP-A-1038858

1. The application does not meet the requirements of Article 6 PCT, because of the following reasons:

Claim 11 describes a coprecipitation method already disclosed in the prior art D1-D3 (see below). It is clear from the prior art D1-D3, that essential features in claim 11 are missing, that allow the alpha-chromium oxide to be obtained. As can be deduced from D1-D3 crystalline phases can only be obtained under certain condition of calcination, since otherwise mainly amorphous oxides are obtained. In the example section of the application all calcinations are carried out at temperatures above 400 °C in an atmosphere of air. These calcination conditions need to be included in claim 11.

Since independent claim 11 does not contain these features it does not meet the requirement following from Article 6 PCT taken in combination with Rule 6.3(b) PCT that any independent claim must contain all the technical features essential to the definition of the invention.

2. The present application does not meet the requirements of Article 33 PCT, in the following respects:

2.1 D1 (paragraphs [0012]-[0014]; [0017]-[0019]; [0027]-[0029]; example 1, comparative example B; claims 1, 2, 4, 12, 16, 17) discloses an alpha-chromia containing fluorination catalyst (hence the catalyst is treated with a fluorinating agent), prepared by coprecipitation process according to claim 11 with ammonia as a precipitating agent, using a trivalent chromium salt and a soluble divalent zinc salt. It is stated in D1 that zinc can be replaced by cobalt and that the precipitate contains alpha-chromium. In comparative example B it is shown that the content of crystalline alpha-chromium oxide depends on the calcination conditions. In the presence of cobalt the alpha-chromium oxide phase contains cobalt in the concentration range given in claim 1.

Therefore the subject matter of at least the claims 1-3 and 11 is not novel in view of D1 (Art. 33(2) PCT).

2.2 D2 (claims 1-6, 9; examples 5-9, Fig. 1; page 3, lines 13-51; page 6, line 5 - page 7, line 36) discloses an alpha-chromia containing fluorination catalyst (hence the catalyst is treated with a fluorinating agent), prepared by coprecipitation process according to claim 11 with ammonia as a precipitating agent, using a trivalent chromium salt and a soluble promoter salt. It is stated in D2 that the soluble promoter salt can be a cobalt salt. In the presence of cobalt under the preparation conditions used in D2, cobalt substituted alpha-chromium oxide is formed in the concentration range given in claim 1.

Therefore the subject matter of at least the claims 1-3 and 11 is not novel in view of D2 (Art. 33(2) PCT).

2.3 D3 (examples, catalyst 7,8, Fig. 2, paragraphs [0023]; [0024]; [0059]; [0069]; [0071]) discloses an alpha-chromia containing fluorination catalyst (hence the catalyst is treated with a fluorinating agent). The catalyst can be prepared by a coprecipitation process according to claim 11 with ammonia as a precipitating agent, using a trivalent chromium salt and a soluble promoter salt. It is stated in D3 that the soluble promoter salt can be a cobalt salt. In the presence of cobalt under the preparation conditions used in D3, cobalt substituted alpha-chromium oxide is formed in the concentration range given in claim 1. The examples of the application only prove that cobalt promoted alpha-chromium oxide shows better catalytic performance than pure alpha-chromium oxide, hence the selection of cobalt as a promoter and the coprecipitation preparation method represent arbitrary selections.

Therefore the subject matter of at least the claims 1-3, 11 does not involve an inventive step in view of D3 (Art. 33(3) PCT).

2.4 Because of the lack of essential features (see under point 1), claim 11 does not solve the inventive problem described in the application and therefore does not involve an inventive step (Art. 33(3) PCT).

2.5 As can deduced from the above points (2.1-2.4) at least the subject matter of the claims 1-3 and 11 is not novel and does not involve an inventive step (Art. 33(2) and 33(3) PCT) and therefore does not satisfy the requirements of Article 33 PCT.

2.6 Dependent claims 4-10,12-14 do not appear to contain any additional features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT with respect to novelty and/or inventive step, because said additional features

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are either disclosed in the prior art documents (see above) or are trivial or within the competence of a skilled person looking for alternative catalysts or processes.